

ABSTRACT OF THE DISCLOSURE

A light oscillation part including an active layer for generating light by current injection, a tuning layer with an intermediate layer formed between the active layer and the tuning layer, for varying an oscillation wavelength by current injection and a diffraction grating formed near the active layer and the tuning layer, and a light amplification part including an active layer for amplifying light by current injection are formed on a semiconductor substrate. Light oscillation elements having wide wavelength variation ranges and the light amplification are integrated on a semiconductor substrate, whereby wide wavelength variation ranges can be obtained and the output light can be much increased.